

SIEMENS

IL766B BIDIRECTIONAL INPUT OPTOCOUPLER

FEATURES

- **Very High Current Transfer Ratio**
IL766B-1: 400% at $I_F=1\text{ mA}$, $V_{CE}=5\text{ V}$
IL766B-2: 900% at $I_F=0.5\text{ mA}$, $V_{CE}=5\text{ V}$
- **Internal R_{BE} for Better Stability**
- **$BV_{CEO} > 60\text{ V}$**
- **Isolation Test Voltage, 5300 VAC_{RMS}**
- **AC or Polarity Insensitive Inputs**
- **No Base Connection**
- **High Insulation Resistance, $10^{11}\Omega$ Typical**
- **Standard Plastic DIP Package**
- **Underwriters Lab File #E52744**

DESCRIPTION

The IL766B is a bidirectional input, optically coupled isolator consisting of two Gallium Arsenide infrared emitters and a silicon photodarlington sensor.

Maximum Ratings (at 25°C)

Emitter (Drive Circuit)

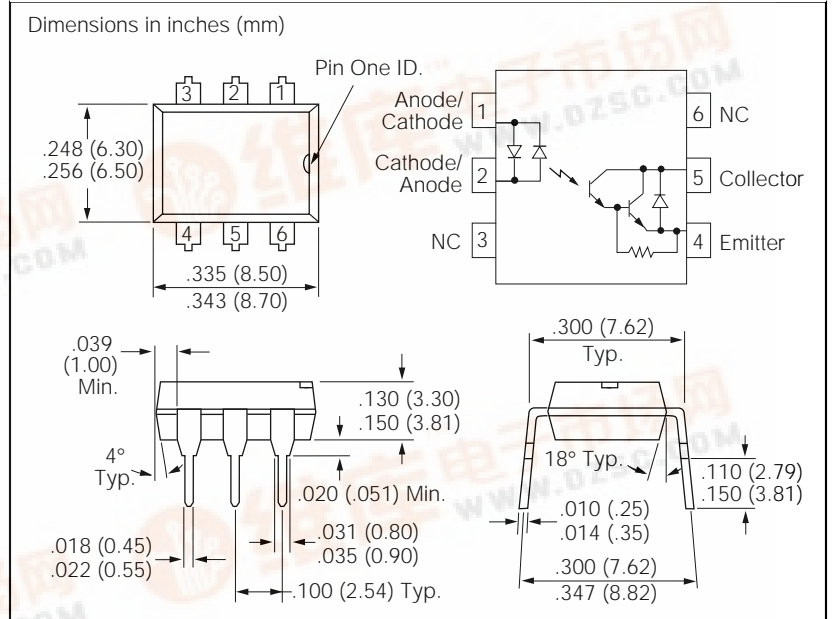
Continuous Forward Current60 mA
Power Dissipation at 25°C..... 200 mW
Derate Linearly from 55°C.....2.6 mW/°C

Detector (Load Circuit)

Collector-Emitter Breakdown Voltage..... 60 V
Collector-Base Breakdown Voltage..... 70 V
Power Dissipation at 25°C Ambient 200 mW
Derate Linearly from 25°C.....2.6 mW/°C

Package

UL Isolation Test Voltage
(t=1 sec.) 5300 VAC_{RMS}
Dissipation at 25°C..... 250 mW
Derate Linearly from 25°C3.3 mW/°C
Creepage 7 min mm
Clearance 7 min mm
Isolation Resistance
 $V_{IO}=500\text{ V}$, $T_A=25^\circ\text{C}$ $10^{12}\Omega$
 $V_{IO}=500\text{ V}$, $T_A=100^\circ\text{C}$ $10^{11}\Omega$
Storage Temperature..... -55°C to +150°C
Operating Temperature.....-55°C to +100°C
Lead Soldering Time at 260°C 10 sec.



Characteristics ($T_A=25^\circ\text{C}$)

	Symbol	Min.	Typ.	Max.	Unit	Condition
Emitter						
Forward Voltage	V_F		1.25	1.5	V	$I_F=\pm 10\text{ mA}$
Detector						
Breakdown Voltage						
Collector-Emitter	BV_{CEO}	60			V	$I_C=1\text{ mA}$, $I_F=0$
Leakage Current						
Collector-Emitter	I_{CEO}		1.0	100	nA	$V_{CE}=10\text{ V}$, $I_F=0$
Package						
Current Transfer Ratio	CTR					
IL766B-1		400			%	$I_F=\pm 1\text{ mA}$, $V_{CE}=5\text{ V}$
IL766B-2		900			%	$I_F=\pm 0.5\text{ mA}$, $V_{CE}=5\text{ V}$
Saturation Voltage, Collector-Emitter	V_{CEsat}			1.0	V	$I_C=10\text{ mA}$, $I_F=\pm 10\text{ mA}$
Turn-On, Turn-Off Time	t_{on} , t_{off}		200		μs	$V_{CC}=5\text{ V}$, $I_F=\pm 2\text{ mA}$, $R_L=100\Omega$

